

CLAIMS

1. A communication handover method for a mobile terminal
so arranged as to, in a communication system in which a plurality
5 of access routers each constituting a subnet are connected
through a communication network and at least one access point
forming a unique communicable area is connected to each of
said plurality of access routers, make a communication with
said access router, to which said access point is connected,
10 through a radio communication with said access point in said
communicable area, comprising:

a reception step of, when said mobile terminal makes
communication switching from an access point which is presently
in communication to a different access point, receiving
15 information on said different access point from said different
access point;

an information acquiring step of, when the communication
switching is made to said different access point, acquiring
information on a router capable of making a preparation related
20 to an additional service, said mobile terminal desires, after
the communication switching on the basis of said information
on said different access point received in said reception step,
and

an information transmitting step of generating a message
25 including information on said additional service presently

in acceptance during communication and, on the basis of said information on said router capable of making the preparation related to said additional service after the communication switching, sending said message through said access point, which is presently in communication, to said router capable of making the preparation related to said additional service after the communication switching.

2. The communication handover method according to claim 1, comprising a storage step in which said mobile terminal stores, in predetermined information storing means of said mobile terminal, correspondence information describing correspondence relationship between said information on said access point and said information on said router capable of making the preparation related to said additional service after the communication switching.

3. The communication handover method according to claim 2, wherein, in said information acquiring step, said information on said router capable of making the preparation related to said additional service after the communication switching and associated with said information on said different access point is acquired from said correspondence information on the basis of said information on said different access point received in said reception step.

4. A communication handover method for a mobile terminal so arranged as to, in a communication system in which a plurality of access routers each constituting a subnet are connected through a communication network and at least one access point forming a unique communicable area is connected to each of said plurality of access routers, make a communication with said access router, to which said access point is connected, through a radio communication with said access point in said communicable area, comprising:

a reception step of, when said mobile terminal makes communications switching from an access point which is presently in communication to a different access point, receiving information on said different access point from the different access point; and

an information transmitting step of generating a message including said information on said different access point received in said reception step and information on an additional service presently in acceptance during communication and, on the basis of said information on said access point, transmitting said message through said access point presently in communication to a predetermined server capable of acquiring information on a router capable of, when the communication switching is made to said different access point, making a preparation related to said additional service,

said mobile terminal desires, after the communication switching.

5. A communication handover method for a mobile terminal
5 so arranged as to, in a communication system in which a plurality
of access routers each constituting a subnet are connected
through a communication network and at least one access point
forming a unique communicable area is connected to each of
the plurality of access routers, make a communication with
10 said access router, to which said access point is connected,
through a radio communication with said access point in said
communicable area, comprising:

an information transmitting step of generating a message
including information on an additional service presently in
15 acceptance during communication and, when said mobile terminal
carries out communication switching from an access point
presently in communication to a different access point,
transmitting said message through said access point presently
in communication to all predetermined routers each capable
20 of realizing said additional service after said communication
switching and selected by said mobile terminal.

6. The communication handover method according to any one
of claims 1, 4 and 5, comprising:
25 a step in which said mobile terminal specifies an access

router having said different access point as a following on the basis of said information on said different access point received in said reception step;

- a step of acquiring information on said access router
5 having said different access point as a following; and

an address generating step of generating address information available in said subnet, to which said access router pertains, on the basis of said information on said access router having said different access point as a following.
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7. The communication handover method according to claim 6, wherein, in said information transmitting step, said message is transmitted in a state where said address information generated in said address generating step is included in said
15 message.

8. The communication handover method according to any one of claims 1, 4 and 5, wherein said additional service is a QoS assurance.
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9. A communication handover program for executing the communication handover method according to any one of claims 1, 4 and 5 through the use of a computer.

- 25 10. A communication message processing method for a router

provided in a communication system so arranged that a plurality of access routers each constituting a subnet are connected through a communication network and at least one access point forming a unique communicable area is connected to each of said plurality of access routers and a mobile terminal existing in said communicable area makes a communication with said access router, to which said access point is connected, through a radio communication with said access point, with said router being capable of making a preparation related to an additional service, said mobile terminal desires, after communication switching when said mobile terminal switches the communication with said access point, comprising:

a first information receiving step of receiving, from said mobile terminal, a message including information on said additional service said mobile terminal presently accepts during communication;

a step of generating a message for a preparation of said additional service on the basis of said information on said additional service;

a terminal specifying step of specifying a partner terminal, with which said mobile terminal presently makes a communication, on the basis of said information on said additional service said mobile terminal presently accepts during the communication;

an information transmitting step of generating a message

for acquiring information, which enables the preparation related to said additional service after the communication switching, on the basis of said information on said additional service said mobile terminal presently accepts during the communication, and transmitting said message to said partner terminal; and

a second information receiving step of receiving a message including said information, which enables the preparation related to said additional service after the communication switching, from said partner terminal or from an arbitrary node lying on a path of said message to said partner terminal.

11. The communication message processing method according to claim 10, comprising a storage step of storing said information, which enables the preparation related to said additional service after the communication switching, received from said partner terminal or from said arbitrary node lying on said path of said message to said partner terminal in said second information receiving step.

12. The communication message processing method according to claim 10, comprising a step of generating a message including said information, which enables the preparation related to said additional service after the communication switching, received from said partner terminal in said second information

receiving step to transmit said message to said mobile terminal.

13. The communication message processing method according to claim 12, comprising:

5 a step of verifying the validity of said address information when address information usable by said mobile terminal in said subnet, to which said access router pertains, is included in said message received from said mobile terminal, which does not exist in said subnet to which said access router
10 pertains, in said first information receiving step; and

a step of, when the validity of said address information is grasped, previously establishing a path for said additional service, said mobile terminal accepts after the communication
15 switching, on the basis of said address information.

14. A communication message processing method for a node or a router provided in a communication system so arranged that a plurality of access routers each constituting a subnet are
20 connected through a communication network and at least one access point forming a unique communicable area is connected to each of said plurality of access routers and a mobile terminal existing in said communicable area makes a communication with said access router, to which said access point is connected,
25 through a radio communication with said access point, and made

to constitute a path related to an additional service when said mobile terminal makes a communication with a predetermined communication terminal, comprising:

5 a reservation judging step of, upon receipt of a message including a flow identifier and a session identifier, related to a predetermined path, for checking whether said predetermined path is set or not, making a judgment as to whether or not a resource reservation is made with respect to said flow identifier and said session identifier included in said
10 message; and

a step of transmitting a message including a result of the judgment in said reservation judgment step to a source or destination of said message for checking whether said predetermined path is set or not.

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15. A communication message processing method for a node or a router provided in a communication system so arranged that a plurality of access routers each constituting a subnet are connected through a communication network and at least one
20 access point forming a unique communicable area is connected to each of said plurality of access routers and a mobile terminal existing in said communicable area makes a communication with said access router, to which said access point is connected, through a radio communication with said access point, and made
25 to constitute a path related to an additional service when

said mobile terminal makes a communication with a predetermined communication terminal, comprising:

5 a reservation judging step of, upon receipt of a message including a flow identifier and a session identifier, related to a predetermined path, for checking whether said predetermined path is set or not, making a judgment as to whether or not a resource reservation is made with respect to said flow identifier and said session identifier included in said message; and

10 a transfer step of, when a judgment in said reservation judging step shows that the resource reservation is made with respect to said flow identifier and said session identifier included in said message, adding address information on an interface used for said resource reservation to a predetermined portion of said message and transferring said message.

16. The communication message processing method according to claim 15, wherein said predetermined portion indicates an adding sequence of said interface address information.

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17. A communication message processing method for a communication node designed to, in a communication system in which a plurality of access routers each constituting a subnet are connected through a communication network and at least one access point forming a unique communicable area is

connected to each of said plurality of access routers, make
a communication with a mobile terminal so arranged as to make
a communication with said access router connected to said
access point through a radio communication with said access
5 point in said communicable area and designed to be capable
of establishing a path related to an additional service when
making a communication with said mobile terminal, comprising:

a step of, upon receipt of a message including a flow
identifier and a session identifier, related to a predetermined
10 path, for seeking said predetermined path, generating a new
message including a result of the seeking of said predetermined
path in said message to transmit the new message as a response
to said message.

15 18. The communication message processing method according
to any one of claims 14, 15 and 17, wherein said message for
checking whether said predetermined path is set or not, or
said message for seeking said predetermined path is a QUERY
message or a RESPONSE message having an area capable of
20 including a flow identifier and a session identifier which
are related to the path.

19. The communication message processing method according
to any one of claims 14, 15 and 17, wherein said message for
25 checking whether said predetermined path is set or not, or

said message for seeking said predetermined path has an area capable of including information on a free resource.

20. A communication message processing method for a node or
5 a router provided in a communication system so arranged that a plurality of access routers each constituting a subnet are connected through a communication network and at least one access point forming a unique communicable area is connected to each of said plurality of access routers and a mobile terminal
10 existing in said communicable area makes a communication with said access router, to which said access point is connected, through a radio communication with said access point, and made to constitute a path related to an additional service when said mobile terminal makes a communication with a predetermined
15 communication terminal, comprising:

a reservation judging step of, upon receipt of a message including a session identifier related to a predetermined path for checking whether said predetermined path is set or not, making a judgment as to whether or not a state exists with
20 respect to said session identifier; and

a transmission step of, when said reservation judging step shows that said state does not exist with respect to said session identifier, transmitting said message toward said predetermined communication terminal.

21. A communication message processing method for a node or a router provided in a communication system so arranged that a plurality of access routers each constituting a subnet are connected through a communication network and at least one access point forming a unique communicable area is connected to each of said plurality of access routers and a mobile terminal existing in said communicable area makes a communication with said access router, to which said access point is connected, through a radio communication with said access point, and made to constitute a path related to an additional service when said mobile terminal makes a communication with a predetermined communication terminal, comprising:

a reservation judging step of, upon receipt of a message including a session identifier related to a predetermined path for checking whether said predetermined path is set or not, making a judgment as to whether or not a state exists with respect to said session identifier;

a reservation judging step of, upon receipt of a message including identification information for specifying a flow and a session identifier related to a predetermined path for checking whether said predetermined path is set or not, making a judgment as to whether or not a state exists with respect to said flow specifying identification information; and

a judgment step of, when said reservation judging step

shows that said state exists with respect to said session identifier, making a judgment as to whether or not a different adjacent node or router is specified in each of said state and said message; and

- 5 a CRN judging step of, when said judgment step shows that said adjacent node or router is specified, making a judgment that it is a crossover node.

22. The communication message processing method according
10 to claim 21, comprising a notification step of, when said CRN judging step shows that it is a crossover node, issuing a notification to the effect that it is a crossover node, to a predetermined node.

15 23. The communication message processing method according to claim 21, comprising a step of, in a state where said node or said router constituting said path related to said additional service has a flow identification list for storing correspondence relationship between each resource and
20 information for specifying a flow, adding or deleting said flow specifying information on said path related to said additional service, which goes through it, to or from said flow identification list.

25 24. The communication message processing method according

to claim 23, comprising an updating step of, when said CRN
judging step shows that it is a crossover node, transmitting,
toward said communication terminal, a message for adding
information, which is for specifying a new flow, to said flow
5 identification list in which the resource for said
predetermined path is allocated with respect to each receiving
node or router.

25. A communication message processing program for executing
10 the communication message processing method according to any
one of claims 10, 14, 15, 17, 20 and 21 through the use of
a computer.